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ABSTRACT

This study investigated the extent to which an instructional-learning management system (the Self-Schedule System) is effective as an intervention technique in promoting the development of young children's self-responsibility in managing their school learning. A student interview questionnaire, the Self-Responsibility Interview Schedule, was constructed to assess children's knowledge about what they do in school, and whether they perceive that they, rather than the teacher, are responsible for managing their own learning. A total of 134 second graders enrolled in individualized instruction programs at two schools were divided into three experimental groups: (1) a class which adopted the Self-Schedule System; (2) three classes (from the same school) serving as one comparison group; and (3) classes (from a second school) serving as another comparison group. The majority of children in groups 1 and 2 came from low-income black families; children in group 3 came from suburban lower middle class white families. Measures of self-responsibility for school learning, student perception of intellectual achievement responsibility, and student task performance were used in the investigation. Results indicate that the Self-Schedule System significantly affected children's perception of self-responsibility for their school learning as well as their rate of task completion. (Author/ED)

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AN INVESTIGATION OF CHILDREN'S CONCEPT OF SELF-RESPONSIBILITY FOR THEIR SCHOOL LEARNING

MARGARET C. WANG AND BILLIE STILES

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1975

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Abstract

The purpose of this study was to investigate the extent to which an instructional-learning management system, the Self-Schedule System, is effective in promoting the development of young children's self-responsibility in managing their school learning. A student interview questionnaire, the Self-Responsibility Interview Schedule (SRIS), was constructed to assess children's knowledge about what they do in school, and whether they perceive that they, rather than the teacher, are responsible for managing their own learning. The results indicate that the Self-Schedule System significantly affected children's perception of self-responsibility for their school learning as well as their rate of task completion.

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AN INVESTIGATION OF CHILDREN'S CONCEPT OF SELF-RESPONSIBILITY FOR THEIR SCHOOL LEARNING

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The development of self-responsibility, or the management of one's own environment and behaviors, has often been expressed as one of the prime objectives of educational programs in our schools. There has been a considerable body of basic research literature dealing with this general topic (e.g., Bandura & Perloff, 1967; Kanfer & Marston, 1963; Liverant & Scodel, 1960; Masters, 1968; Rotter, Seeman, & Liverant, 1962; Strickland, Note 1). In recent years, a number of studies have been designed to examine the functional relationship between students' ability to manage their own learning and other school learning outcomes (e.g., Felixbrod & O'Leary, 1973; Glynn, Thomas, & Shee, 1973; Lovitt & Curtiss, 1969). However, very few systematic investigations have been carried out to study the characteristics and effects of instructional intervention programs that have been designed specifically to develop the student's self-responsibility, particularly in the context of a comprehensive educational program implemented in school settings (Wang & Brietson, Note 2; Wang, Mazza, Haines, & Johnson, Note 3). The present study was developed to investigate the effects of an instructional-learning management system on certain student learning outcomes, with particular focus placed on the development of young children's self-responsibility in managing their school learning.

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Method

Setting

The study was carried out in two public elementary schools in the Pittsburgh area. The schools, which serve as the developmental schools for the Learning Research and Development Center (LRDC) of the University of Pittsburgh, operated under an individualized instructional program developed by LRDC.

The LRDC individualized instructional program includes two major components, the "prescriptive" learning component and the "exploratory" learning component. The prescriptive learning component of the program includes math and reading. Learning activities in this component are assigned to students on the basis of formal diagnostic test results. The exploratory learning component of the program includes a variety of student-initiated learning activities. They are generally "open-ended" independent learning projects that may relate to such subject matter areas as math, science, social studies, reading, writing, pre-reading, and language arts, creative arts, construction, and other related conceptual and perceptual skills. Exploratory learning activities are generally selected independently by the students on the basis of their own interests and choices. (For a fuller description of the LRDC individualized instructional program, see Appendix A.)

The school day for the second-grade classes in these schools, at the time this study was initiated, was broken into block periods for the LRDC individualized reading program, the LRDC individualized math program, group learning (curriculum areas specified and designed by the public schools, e.g., spelling, social studies, music, gym, etc.), and the LRDC exploratory learning program. The scheduling of each of the subject areas named above was very much like the scheduling systems adopted by most of the elementary schools in this country. We have come to call this particular form of scheduling the Block Schedule System.

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In implementing the LRDC program under the Block Schedule System, all the students are required to engage in learning activities prescribed for a given subject area (e.g., math) at the time specifically designated by the teacher or the school administrator, and each student is to complete all the assignments the teacher has prescribed for that subject area during the specified block period. Students who have completed their assignments prior to the end of the period scheduled for that subject area are given either additional assignments in that subject area or simply some "seat work" to occupy their time until the end of the period. The Block Schedule System was used during the baseline periods of the present study.

Under the experimental periods of the present study, a different scheduling system, the Self-Schedule System, was introduced to implement the LRDC individualized instructional program in one of the second-grade classrooms. The Self-Schedule System is an instructional-learning management system designed not only for implementing the LRDC individualized instructional program in school settings, but also and more importantly, for developing students' ability to manage and to plan for their learning in school.

Under the Self-Schedule System, the students receive the same amount of daily assigned work for each subject (e.g., math) and have the same amount of total time available to work on the assignments as under the Block Schedule System. However, no specific time block is designated for working on tasks of any given subject area, except for group lessons specified by the public schools (e.g., physical education). The students can work on the learning tasks prescribed by the teacher in any of the subject areas or work on exploratory learning tasks of their own choice at any time. Therefore, under the Self-Schedule System, the students are given the opportunity to make their own decisions on WHEN they will do WHAT, although some of the WHAT is prescribed by the teacher. (For further discussion of the rationale and detailed designations of the design of the Self-Schedule System, see Wang, 1974.)

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Subjects

One second-grade classroom from one of the developmental schools adopted the Self-Schedule System for the present study. The class was volunteered by the teacher from one of the four second-grade classes in that school. All the second-grade classes were operating under the LRDC individualized instructional program, and children were assigned to the four classes on a random basis. This particular school is located in an inner-city neighborhood, and the majority of the students in the school came from low income black families.

The second-grade class that adopted the Self-Schedule System during the experimental periods of the present study had 21 students, with 11 boys and 10 girls. The mean chronological age (CA) for this class at the time the study began was 7 years, 7 months, with a range of 7 years to 8 years, 7 months. The remaining three second-grade classes of that same school served as the comparison Group A for the present study. This group included 64 students, with 34 boys and 30 girls. The mean CA for the group was 7 years, 8 months at the beginning of the study, and the range was 7 years to 9 years, 2 months.

In addition to comparison Group A, students from the second-grade classes of another LRDC developmental school located in a suburban school district south of Pittsburgh also served as subjects for comparison purposes. They constituted comparison Group B. Students from this school generally come from lower middle-class white families. Comparison Group B was comprised of 23 boys and 26 girls. Their mean CA was 7 years, 5 months, and the range was 7 years to 8 years, 4 months.

Design

The comparison groups adopted the Block Schedule System throughout the present study, and a modified repeated measure (A-B-A-B) design was used to investigate the effects of the Self-Schedule System in the one

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second-grade class that adopted the Self-Schedule System during the experimental periods. This class used the Block Schedule System during the two baseline periods (B_1 and B_2) and adopted the Self-Schedule System during the two experimental periods (E_1 and E_2). Five weeks of school time were devoted to each of the four periods in the order of B_1-E_1-B_2-E_2.

The conditions during the two baseline periods were identical, as were conditions during the two experimental periods except for one variable. During E_1, students were given the responsibility for deciding when to do what as long as they completed all the assignments from the previous day (the assignments for any given student per day included prescriptions in reading and in math and two student-selected exploratory learning activities). Those students who did not complete all the assignments for a given day lost the privilege of deciding when to do what. They had to complete the assignments in the sequence prescribed by the teacher. During E_2, all the students could decide when to do what, even if they had not completed all the assigned tasks during the previous day. Teachers discussed the work performance with the students and verbally reinforced the children for completing the work, as in B_1, B_2, and E_1, but never took away their privilege of choosing and scheduling their own activities.

Measures

Three measures were used to investigate the effects of the Self-Schedule System on the development of the student's perception of self-responsibility for school learning and on their learning performance. The three measures are described briefly in this section.

1. The measure of self-responsibility for school learning. The Self-Responsibility Interview Schedule (SRIS) was designed for the present study to assess students' perceptions of self-responsibility for school learning. It was constructed to assess students' knowledge about what they do in school and to determine whether they perceive that they, rather than the

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teacher, are responsible for managing their own learning. The term "self-responsibility for one's school learning" is defined as the ability to: (a) make decisions about when to do what in school; (b) recognize that although the student is responsible for choosing many of his/her own activities, some portion of the what is specified by the teacher on the basis of diagnostic test results, and that the teacher-prescribed learning activities must be included in his/her learning plans; (c) structure his/her learning plans and environment for carrying out the learning plans, and (d) recognize that the tasks included in his/her learning plans must be completed within the specified amount of time (e.g., an hour, a day, a week, etc.).

Specifically, the SRIS included 21 questions designed to obtain information about the student's knowledge of his/her learning in school, sense of control over the school learning environment, ability to evaluate his/her own learning, and preferences with respect to operating under a management system that requires the student to be responsible for what and how he/she learns in school, or under a management system that places the responsibility of planning for student learning solely on the teacher. The test-retest reliability of the SRIS was .59, and the percent of inter-rater agreement of the scoring of SRIS was 98%. A copy of the SRIS and the scoring procedure is included in Appendix B.

2. The measure of student perception of intellectual achievement responsibility. The Intellectual Achievement Responsibility (IAR) Questionnaire, designed by Crandall, Katkovsky, and Crandall (1965), was administered to obtain additional information about students' perception of the locus of control for their intellectual and school achievements. The IAR was designed to assess children's internal-external perceptions regarding success/failure in their intellectual and academic achievement. According to the authors, internal perception is defined as the belief that "rewards and punishments are dependent upon their own [subjects'] instrumental behavior," and external perception is defined as "the

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perception that those events [which cause rewards and punishments] occur at the whim or discretion of some agent other than the individual" (Crandall & Lacey, 1972, pp. 1123-1124). The IAR consists of 34 forced-choice items, and each item describes either a positive or a negative achievement experience which routinely occurs in children's daily lives.

3. The measure of student task performance. Weekly task completion rates (tasks completed correctly per week) were calculated to assess the learning performance of each student enrolled in the experimental class during each of the four periods. The rates were calculated as ratios of the number of assignments completed to the number of assignments prescribed per week.

Procedure

The SRIS was administered during the third week of periods E_1, B_2, and E_2 to students in the self-schedule class and during the fourth week of B_2 and E_2 to the comparison groups. Items 20 and 21 were not administered to the comparison groups. All of the SRIS interviews were conducted by the junior author of this paper. The interviews were administered orally and individually in a space outside of the classroom and away from distractions. Furthermore, in order to control for the interviewer's bias, a specific set of directions for administering the SRIS was developed. The interviewer followed the directions explicitly, and every effort was made to adhere to the standard instruction. Student responses to each item were recorded verbatim on the interview form. The SRIS interview took approximately 10 minutes per student to administer.

The IAR was administered to all the students at the end of the study. The IAR was also administered orally and individually in an interview area set up out of the classroom specifically for this purpose. Two research assistants administered the IAR to the students in both schools.

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They used a cassette recorder and a prerecorded cassette tape of the IAR questions. The recorder was equipped for automatic stopping. The tape stopped after each question, and the interviewer pressed the start button on the recorder when both the student and the interviewer were ready for the next question. The student was asked to respond to each question verbally after each stop, and the interviewer marked each response accordingly on a separate answer sheet for each student. The questions were repeated verbatim by the interviewer when necessary; however, in no case was the question rephrased for the student. In administering the IAR, the interviewers were instructed explicitly to follow the procedures specified by the authors of the IAR.

Table 1 gives a summary of the scheduling and the type of measures obtained for the present study.

Table 1

Summary of Periods in Which the Various Measures Were Obtained

	MEASURES				
	SRIS		IAR		Task Completion Rate
PERIODS	Self-Schedule Group	Comparison Groups[a]	Self-Schedule Group	Comparison Groups	Self-Schedule Group
Baseline 1					X
Experimental 1	X				X
Baseline 2	X	X			X
Experimental 2	X	X	X	X	X

[a]Two items from SRIS were deleted from the SRIS interviews for the comparison groups because they are questions pertaining to the Self-Schedule System only. These items were also deleted from the data set of the experimental group when comparisons were made between the SRIS scores of the experimental group and the comparison groups.

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Results and Discussion

In analyzing the SRIS and the IAR results, we were specifically interested in learning (a) whether the SRIS scores and task completion rates of the self-schedule group changed significantly between the baseline and the experimental periods, and (b) whether the SRIS scores of the self-schedule group and of the comparison groups differed significantly during the baseline and during the experimental periods, and (c) whether the IAR scores of the self-schedule group differed significantly from that of the comparison groups.

The Effects of the Self-Schedule System on the SRIS Scores

The multivariate analysis of variance (MANOVA) procedure developed by Cooley and Lohnes (1971) was used to compare the differences in the measures between periods for the self-schedule group. A statistically significant main effect was found, $F(2, 58) = 20.79$, $p < .01$, using the SRIS scores and the task completion rates of the self-schedule group for periods E_1, B_2, and E_2. The B_1 period was not included in this analysis because SRIS was not administered to the experimental group during B_1. This result suggests that the Self-Schedule System significantly affected the second graders' perception of self-responsibility for school learning and their rate of task completion.

A MANOVA was also performed to investigate the differences in the SRIS scores between the self-schedule group and the comparison groups. A statistically significant main effect was found, $F(3, 237) = 21.01$, $p < .01$. The result again supported our hypothesis that the Self-Schedule System significantly affects the students' perception of self-responsibility.

To further investigate effects of the Self-Schedule System on students' perception of self-responsibility, an additional series of analyses were performed to compare the SRIS scores of the self-schedule group between the

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experimental and the baseline periods, and the SRIS scores between the self-schedule group and the comparison groups during the experimental and the baseline periods. The results are summarized in Table 2.

The first column of Table 2 indicates the variables included in each comparison, the second and the third columns show the mean and standard deviation (S.D.) of the first set of data being compared, and the fourth and fifth columns show the mean and S.D. of the second data set. The last four columns of Table 2 report the degrees of freedom for each comparison, the univariate *F* ratio, and probability.

The first series of comparisons listed under Section A of Table 2 were concerned with the differences found in the SRIS scores of the self-schedule group between periods E_1, B_2, and E_2. As indicated by the univariate ratios for each set of comparisons, while the SRIS responses differed significantly between Baseline 2 and the two experimental periods, the SRIS responses for the two experimental periods were quite similar; that is, the difference between E_1 and E_2 was not statistically significant.

The summary of univariate *F* ratios between the experimental group and the comparison groups on the SRIS scores for E_2 and B_2 are reported in Section B of Table 2. As indicated by the *F* ratios, the SRIS responses of the self-schedule group did not differ significantly from those of the comparison groups during baseline when the Self-Schedule System was not implemented, while the differences in the SRIS between the self-schedule and the comparison groups were statistically significant during the experimental period. These results again supported our hypotheses about the effects of the Self-Schedule System on students' perception of self-responsibility for school learning.

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Table 2

Comparisons of SRIS Responses

Comparisons	Data Set Mean	Data Set S.D.	Data Set Mean	Data Set S.D.	ndf_1	ndf_2	F Ratio	p[b]
A. Responses from the Self-Schedule Group								
1. Baseline Period 2 and Experimental Period 1	15.26	2.49	17.10	2.00	1	38	6.64	< .05
2. Baseline Period 2 and Experimental Period 2	15.26	2.49	17.62	2.31	1	38	9.62	< .02
3. Experimental Period 1 and Experimental Period 2	17.10	2.00	17.62	2.31	1	40	.62	--
B. Responses from Self-Schedule and Comparison Groups[a]								
1. Baseline Period:								
a. Self-Schedule Group and Comparison Group A	13.89	2.02	13.12	1.82	1	74	2.42	--
b. Self-Schedule Group and Comparison Group B	13.89	2.02	12.93	2.25	1	63	2.58	--
c. Self-Schedule Group and Comparison Groups A+B	13.89	2.02	13.03	2.02	1	122	3.00	--
2. Experimental Period:								
a. Self-Schedule Group and Comparison Group A	16.00	1.95	13.11	4.04	1	76	9.86	< .01
b. Self-Schedule Group and Comparison Group B	16.00	1.95	13.05	2.72	1	61	19.59	< .01
c. Self-Schedule Group and Comparison Groups A+B	16.00	1.95	13.08	3.53	1	118	13.45	< .01

[a]Two items from SRIS were deleted from the SRIS interviews for the comparison groups because they are questions pertaining to the Self-Schedule System only. These items were also deleted from the data set of the self-schedule group when comparisons were made between the SRIS scores of the self-schedule group and the comparison groups.

[b]Scheffé posterior test.

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The Effects of the Self-Schedule System on the IAR Scores

A small difference was found in the IAR scores of the experimental and the comparison groups. However, the differences were not statistically significant. The mean IAR scores for the self-schedule group was 21.10, with a standard deviation of 2.83, while the mean for the comparison groups was 20.13, with a standard deviation of 6.50. However, it is interesting to note the differences found in the IAR score among the three groups (self-schedule group, comparison Group A, and comparison Group B). While the IAR scores for the self-schedule group (mean = 21.10) were significantly higher ($p < .05$) than comparison Group A (mean = 19.22; comparison Group A came from the same school as the self-schedule group), the self-schedule group scored significantly lower in IAR ($p < .01$) when compared with comparison Group B (mean = 23.90; comparison Group B consisted of students who came from a different school which differs in a number of student characteristics). The results seem to suggest that the IAR scores probably reflected some student characteristics other than what we have assumed the IAR actually measures.

The Effects of the Self-Schedule System on Student Task Performance

To investigate the effects of the Self-Schedule System on student task performance, an analysis of variance was performed to compare the differences in the rate of task completion of the self-schedule group for each of the four periods. A significant main effect was found, $F(3.79) = 6.21$, $p < .01$), indicating that the student task performance, as measured by the rate of task completion, was affected significantly by the Self-Schedule System.

Figure 1 indicates the changes in student learning performance as measured by the student rate of task completion during each period. The mean rate of task completion during B_1 was 54.86, and it increased to

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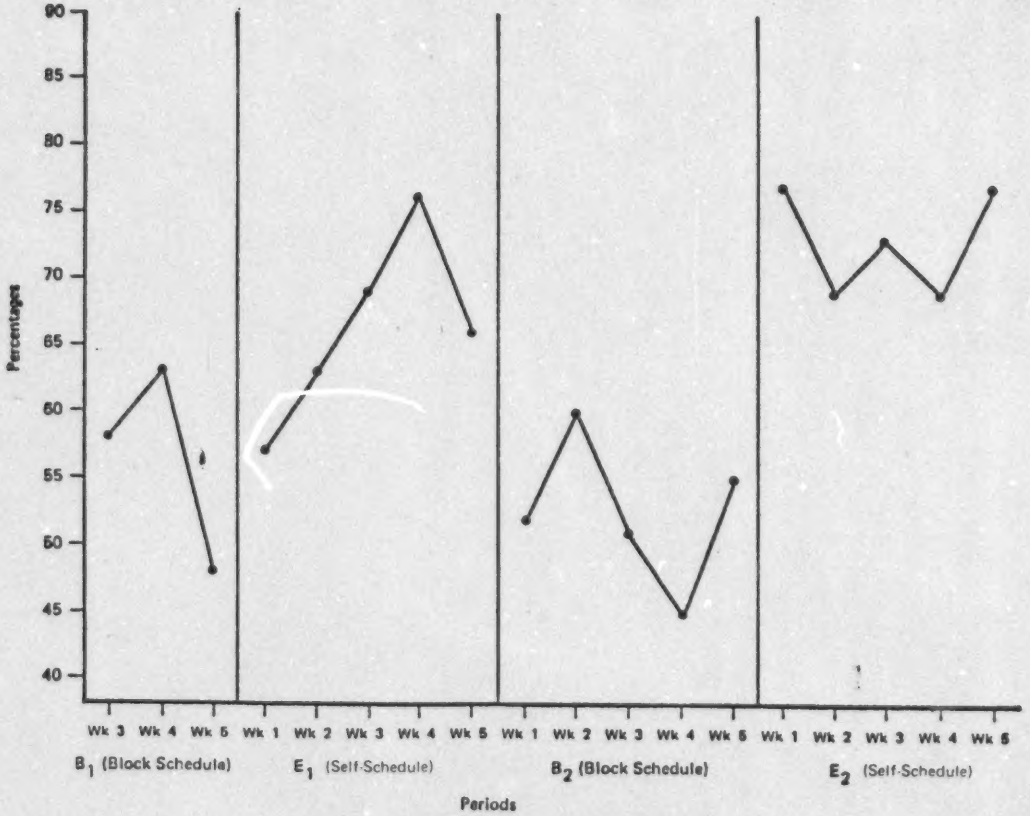

Figure 1. Mean percent of assignment completion by the whole class per week.

64.57 during E_1 ($p < .05$), decreased to 51.62 during B_2 ($p < .01$), and increased to 73.52 during E_2 ($p < .01$).

To investigate the differential effects of the Self-Schedule System on the learning performance of individual students, we examined the learning performance of a boy and a girl randomly selected from each of the three different achievement groups (high, average, and low). Figure 2 shows the task completion rate of two students selected from the low end-of-year achievement group. The rate of task completion of each student from each of the four periods, their end-of-year achievement level in reading and math, and the Wide Range Achievement Test (Jastak, Bijou, & Jastak, 1965) scores are reported in the figure. As shown in Figure 2, both student A and student B consistently completed more tasks under the Self-Schedule System than under the Block Schedule System. Figure 3 shows the results of two students selected from students of average achievement, and Figure 4 shows the results of two students from the high achievement group. Again, the same pattern of task completion rates were found. Students in the average and the high groups also completed more tasks during E_1 and E_2.

Interrelationships Among Measures of Student Learning Processes, Learning Performance, and Students' Perception of Self-Responsibility

To investigate the relationships among the measures obtained for the present study, a correlation analysis was performed. Table 3 summarizes the intercorrelations among the scores of a selected number of variables obtained from our observations, student task completion rates, and the SRIS and the IAR scores.

Some significant relationships among the measures were found. The results indicate, for example, that the task completion rates are significantly related to the SRIS scores ($p < .05$), indicating that students' concept of self-responsibility is related significantly to task completion

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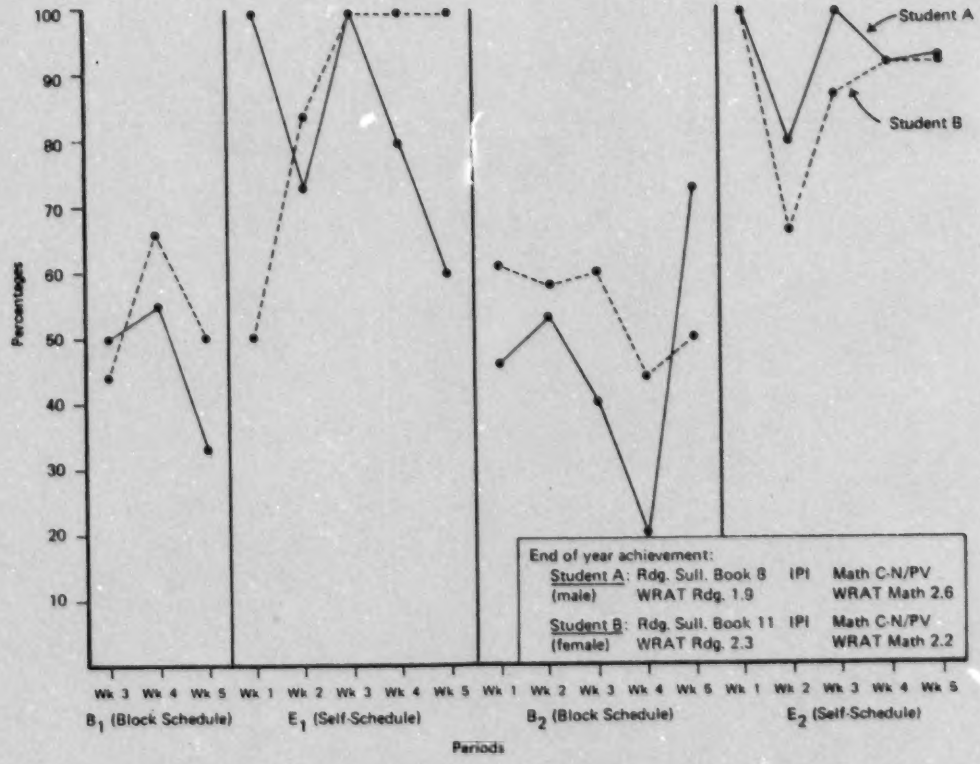
Student A
Student B
Percentages
100
90
80
70
60
50
40
30
20
10
End of year achievement:
Student A: Rdg. Sull. Book 8 IPI Math C-N/PV
(male) WRAT Rdg. 1.9 WRAT Math 2.6
Student B: Rdg. Sull. Book 11 IPI Math C-N/PV
(female) WRAT Rdg. 2.3 WRAT Math 2.2
Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5
B1 (Block Schedule)
E1 (Self-Schedule)
B2 (Block Schedule)
E2 (Self-Schedule)
Periods

Figure 2. Mean percent of assignment completion per week.

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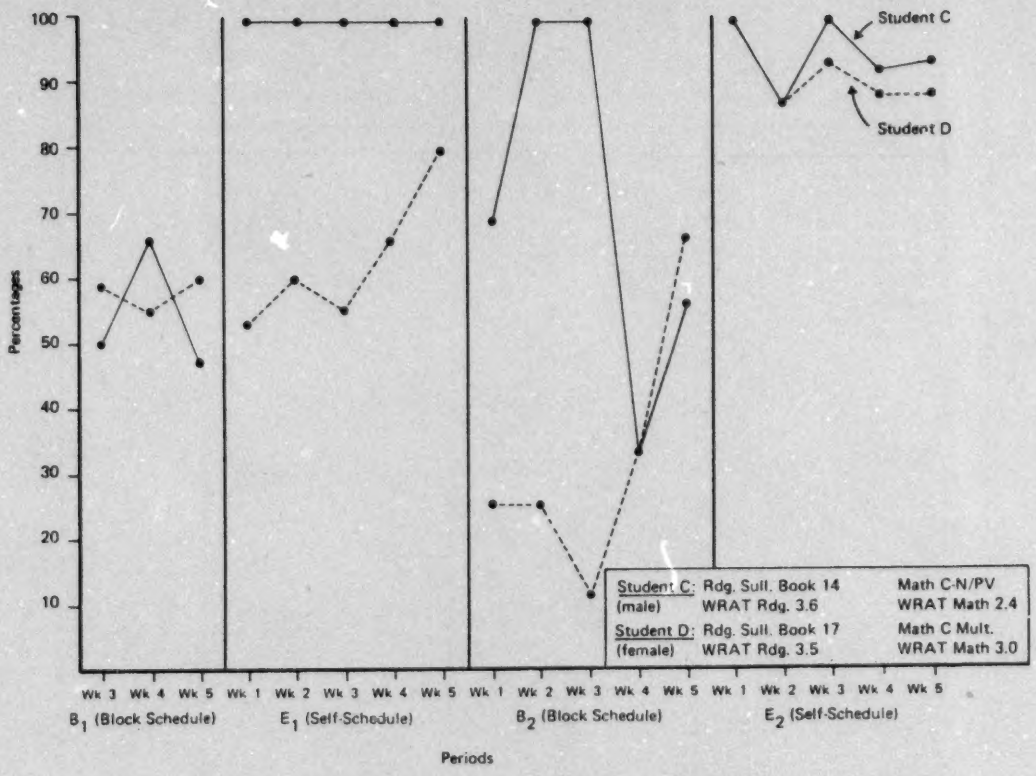
Student C
Student D
Percentages
100
90
80
70
60
50
40
30
20
10
Student C: (male) Rdg. Sull. Book 14 WRAT Rdg. 3.6 Math C-N/PV WRAT Math 2.4
Student D: (female) Rdg. Sull. Book 17 WRAT Rdg. 3.5 Math C Mult. WRAT Math 3.0
Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5
B1 (Block Schedule)
E1 (Self-Schedule)
B2 (Block Schedule)
E2 (Self-Schedule)
Periods

Figure 3. Mean percent of assignment completion per week.

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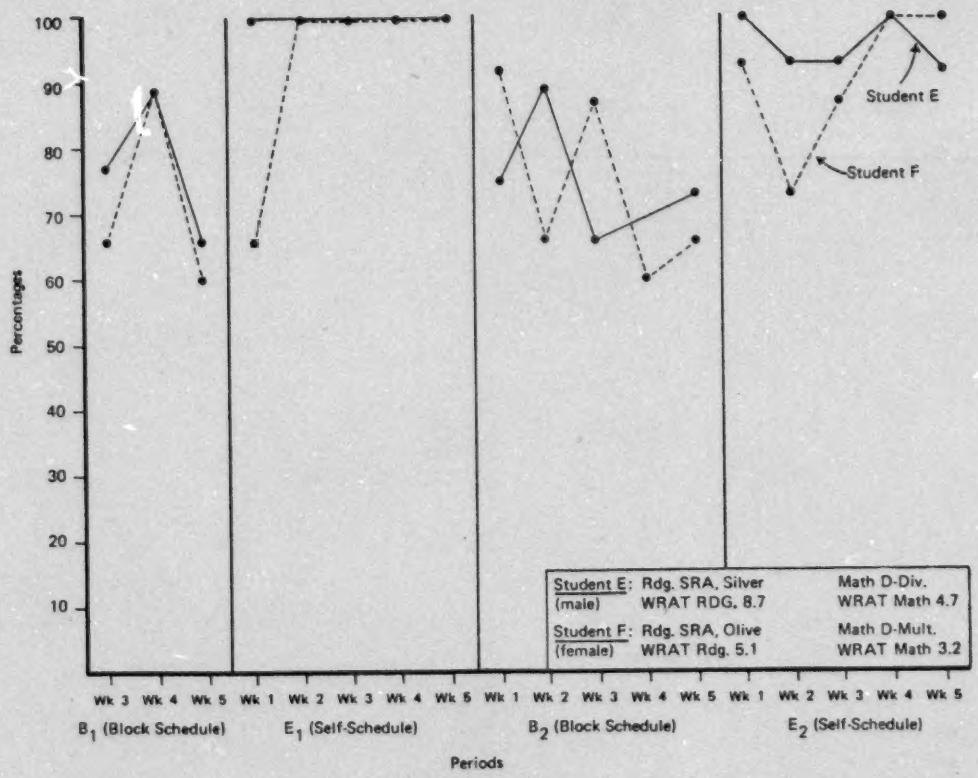
100
90
80
70
60
50
40
30
20
10
Percentages
Student E
Student F
Student E: (male) Rdg. SRA, Silver WRAT RDG. 8.7 Math D-Div. WRAT Math 4.7
Student F: (female) Rdg. SRA, Olive WRAT Rdg. 5.1 Math D-Mult. WRAT Math 3.2
Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 1 Wk 2 Wk 3 Wk 4 Wk 5
B1 (Block Schedule)
E1 (Self-Schedule)
B2 (Block Schedule)
E2 (Self-Schedule)
Periods

Figure 4. Mean percent of assignment completion per week.

Table 3

Summary of Correlation Results for Selected Variables

$N = 21$

	Task Completion Rate	SRIS	IAR	Management Interactions with Teacher	On Task	Waiting	Distracted	Management Interactions with Teacher
Task Completion Rate	1.00	.51*	.11	.06	.40	.04	.55**	.21
SRIS		1.00	.36	.09	.30	-.23	-.17	.04
IAR			1.00	-.03	.15	-.00	-.02	-.01
Management Interactions with Teacher				1.00	.10	.10	-.14	.47*
On Task					1.00	-.57**	-.71**	.17
Waiting						1.00	-.11	-.02
Distracted							1.00	-.11
Instructional Interaction with Teacher								1.00

*$p < .05$

**$p < .01$

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rates. It is interesting to note that certain significant relationships were found between some process variables and outcomes. As shown in Table 3, task completion rate is negatively correlated with distracted behaviors ($p < .01$), and on-task behavior is related negatively to student waiting behavior ($p < .01$) and distracted behaviors ($p < .01$). These results suggest that students' classroom behaviors do relate to certain learning outcomes such as task completion rates and students' ability to focus attention to the task at hand. We suspect that many of the nonsignificant correlations included in Table 3, particularly those between process variables and outcomes, would be statistically significant if we included a larger N in our analyses.

General Conclusions and Summary

In this paper we briefly described an instructional intervention program, the Self-Schedule System, designed to help students to develop their ability to take increasing responsibility for their learning in school. We also discussed some preliminary findings on the effects of the program, particularly in terms of the development of the students' ability to take responsibility for their own learning and their learning performance.

In spite of the pilot nature of the present study, the overall results clearly suggest that the Self-Schedule System was effective in developing students' ability to take increasing responsibility for school learning and students' perceptions of self-responsibility for their school learning and academic achievement. In other words, when students are given the opportunity to acquire the ability to take responsibility for their learning, they can indeed develop the ability and the perception of this self-responsibility, and when the students are given the opportunity to be responsible for what and how they are learning in school, they tend to complete more learning tasks in less time. Significant findings from the present study include the following:

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1. The differences in students' perception of self-responsibility for school learning as measured by SRIS under the Block Schedule System and the Self-Schedule System were found to be statistically significant. (a) The SRIS scores of students in the self-schedule group under the Block Schedule System during the baseline periods of the study did not differ significantly from the SRIS scores of students in the comparison groups who were also operating under the Block Schedule System. (b) The mean SRIS score of students in the self-schedule group under the Self-Schedule System during the experimental periods was significantly higher than the mean SRIS score of students in the comparison groups who were operating under the Block Schedule System period at the time. (c) Responses to the SRIS by students in the self-schedule group were found to be significantly different under the two instructional-learning management systems.

2. A statistically significant difference was found between the IAR scores of the self-schedule group and comparison Group A, but the difference between the self-schedule group and comparison Group B was not statistically significant. Nevertheless, the self-schedule group had a higher mean IAR score than both of the comparison groups.

3. Student learning performance of the self-schedule group, as measured by the rate of task completion, was found to be significantly different under the two instructional-learning management systems. The rate of task completion was significantly higher during the periods when the Self-Schedule System was implemented.

4. Students' perception of self-responsibility for school learning, as measured by the SRIS, significantly related to the students' task completion rates.

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APPENDIX A

The LRDC Individualized Instructional Programs

by

Margaret C. Wang

The LRDC individualized instructional programs include the Individually Prescribed Instruction (IPI) program for children of elementary grades (grades one through six) and the Primary Education Project (PEP) designed for children of early childhood age (ages three through seven). Both IPI and PEP were developed to provide educational experiences that are adaptive to the learning needs of the individual student. The programs were designed with the basic assumptions that: (a) children display a wide range of differences in their entering abilities and in the ways in which they learn and acquire competencies; and (b) to provide educational experiences that are adaptive to individual differences means providing learning situations (e.g., classroom organization, learning materials, etc.) that can accommodate the needs of the individual student and, when needed, teaching the prerequisite abilities demanded by the learning situations (Glaser, 1972).

The LRDC individualized instructional programs are designed with the following guidelines (Glaser, 1968, 1972): (a) The goals of learning are specified in terms of observable student performance and the conditions under which this performance is to be manifested. (b) The learner's initial capabilities relevant to forthcoming instruction are assessed. (c) Educational alternatives suited to the student's initial capabilities are presented to him and the student selects or is assigned one of these alternatives. (d) The student's performance is monitored and continuously assessed as he learns. (e) Instruction proceeds as a function of the relationship between measures of student performance, available instructional

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alternatives, and criteria of competence. (f) As instruction proceeds, data are generated for monitoring and improving the instructional system.

Curriculum components of the IPI program include the Individualized Mathematics curriculum (Lindvall & Bolvin, 1966), the Individualized Science curriculum (Klopfer, 1970), and the New Primary Grades Reading System (Beck & Mitroff, 1972). Curriculum components for PEP include beginning math, classification and communication skills, perceptual skills, and the exploratory learning skills (Resnick, Wang, & Rosner, 1975).

Aspects of curriculum developed for each of the curricular components include: the specification of curriculum objectives, the sequencing of the objectives, the design of instructional and learning activities and materials, the specification of teacher and student behaviors, and the specification of procedures for diagnosing and monitoring student learning progress. Provision for the diagnosing and monitoring of individual student learning progress is at the core of the individualized instructional programs. Procedures and instruments (e.g., Cox & Boston, 1967; Wang, Note 1) for diagnosing and monitoring student learning have been designed to provide teachers with the information necessary for adapting the use of the program components to the individual students, and to communicate, on a substantive basis, with parents and others concerned with the learning progress and the development of the student.

The implementation of the LRDC individualized instructional programs in classroom settings ideally requires two adults in each class, a teacher and an aide. During the instructional period, the adults generally perform two basic roles, the "traveling" role and the "testing and tutoring" role. The traveling role requires the teacher or aide to circulate among the students, helping with their learning tasks and checking them off as they are completed, and interacting in various ways, generally for quite brief period of time. The testing and tutoring role requires the teacher

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or aide to work intensively with individuals or small groups of students for such purposes as administering diagnostic tests, tutoring individual students, giving group lessons, or working with a group of students on a special learning project. The roles described above are "idealized" descriptions; in practice, the two adults fluctuate from one role to the other as need arises.

There are two basic sets of teacher functions, both necessary for smooth and effective implementation of the LRDC program in classroom settings. These are the management functions and the instructional functions. The management functions are concerned with the establishment of an effective system for classroom management. They include such functions as: the provision of materials and equipment for the various components of the program; the physical arrangement, display, storage, and maintenance of materials; demonstrating and explaining rules and the use of materials; and praising or otherwise reinforcing students for appropriate self-management activities.

Two sets of teacher instructional functions have been identified: the "didactic" and the "consultant" functions. The didactic instructional functions are related to the administering of tests associated with the formal curricula, prescribing learning tasks on a daily basis, checking prescriptive activities, and giving help on them as required. The teacher and/or the aide also assume, under the didactic instructional functions, the responsibility to conduct special tutoring sessions on certain specified curriculum objectives, as well as large or small group lessons as dictated by the various curricula and by the needs of the students.

The consultant functions are less highly structured, but like the didactic functions, they are carried out in the course of both traveling and testing and tutoring. These functions require the teacher and/or the aide to focus on observation of students' learning processes beyond what is provided in the formal tests; to use questioning and probing techniques

to stimulate development of self-reflection in problem-solving activities on the part of the students; to engage in planning with students, helping them decide what to do and how to do it; to pose problems for students to work on and to help them in planning and carrying out solutions; and to engage in games and other forms of play with the students.

No clear distinction can be made in practice between management and instructional functions--every act contributes to both. Similarly, the teacher should fulfill both didactic and consultant instructional roles. Nevertheless, the distinctions are useful as a means of describing the range of functions that teachers must meet when implementing the LRDC individualized instructional programs. The distinctions between the two functions also serve to characterize, in a general way, the teacher behaviors to be observed in an LRDC classroom.

The role of the student under the LRDC individualized instructional program centers around the management of one's own activities in learning situations (Wang, 1974). In general, the student is expected to:

1. Work on and complete certain tasks prescribed by the teacher. (The nature and the amount varies from student to student and depends on the learning needs and individual student characteristics.)

2. Work on and complete certain tasks of the student's own choice.

3. Make decisions about when to do what work. (The range of the options and the degree of control varies from age to age and from class to class.)

4. Take diagnostic tests when asked by the teacher.

5. Participate in tutoring sessions when asked by the teacher.

6. Participate in group activities when required.

7. Ask the teacher to check the work as one completes the assignments.

8. Ask for help (from the teacher and/or peers) when needed.

9. Assist others (initiates and/or when requested) for management as well as for learning purposes.

10. Follow classroom management rules.

11. Locate learning materials and equipment independently.

12. Carry out material management responsibilities (e.g., clean up, return equipment, etc.).

13. Take turns and share activities and materials with others.

14. Interact with peers for personal as well as school related activities.

15. Tolerate disruption of the activities at hand for attending certain group activities and/or certain testing or tutoring sessions.

16. Attend to the task at hand and ignore distraction from the different activities being carried out by others at the same time.

17. Budget one's own work time to meet the time constraints established for certain tasks.

The student roles listed above are behaviors required to function effectively under the LRDC individualized instructional programs. However, the ability to carry out the roles are not assumed as part of the entering behaviors of all students. Students are taught to acquire the minimum level of competence required to assume these self-management and independent learning roles.

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APPENDIX B

Self-Responsibility Interview Schedule

by

Margaret C. Wang

A. Knowledge about the learning environment and how one functions in the environment:

1. What was the first thing you did today?

   Task _____

2. What are the things you still have to do today?

   _____

   _____

3. What is a ticket for? (Show sample if necessary)

   Check work _____ Tell what to do _____ Others _____

   _____

4. What happens if you don't finish everything that you are supposed to do by the end of the day?

   _____

   _____

5. What does an X on your ticket mean?

   _____

6. Do you have to finish everything on your ticket?

   Yes _____ No _____

7. If the answer to #7 was no, then ask this question: Why not?

   _____

8. If the answer to #7 was yes, then ask this question: Why do you want to make sure that you finish your ticket every day?

   _____

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8. What are things that you do in your classroom that are assigned by the teacher?

   (1) _____

   (2) _____

   (3) _____

9. What are you going to do now when you go back to the room?

   _____

B. Perception of the locus of control over the learning environment:

10. Who decided you had to do (task named in #1) _____ first?

    Teacher _____ I (student) _____ Other _____

11. Can you decide what you want to do first? (Use only if response is "teacher" or "other" on preceding question).

    Yes _____ No _____

12. How do you know that you still need to do (Base answer to #2) _____ today?

    _____

    _____

13. What are things that you do in your classroom that you can decide for yourself?

    (1) _____

    (2) _____

    (3) _____

C. Evaluation of one's own learning performance:

14. Do you think you are a hard worker? Yes _____ No _____

15. How do you know that you are a hard worker (or not a hard worker)?

    _____

    _____

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16. How do you feel when you get all the work on your ticket done?

Positive _____ Negative _____ Other _____

17. Why? _____

18. How do you feel if you don't get all your work done by the end of the day?

Positive _____ Negative _____ Other _____

19. Why? _____

20. Which way do you like better--When you have to do reading with everyone else at the time when the teacher tells you to, or when you can decide for yourself when you want to do reading or math or exploratory during the day?

Self-Schedule _____ Block Schedule _____

21. Why? _____

_____

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Scoring Rules for the Student Questionnaire

A. Knowledge about one's own learning

Item Number	Answer	Score
1	Named task (e.g., a subject area--reading or a task designed by the child--"weighed my book").	1
4	Named task	1
6	Given accurate explanation (e.g., check work, tell what to do, mark items, remember what you did, etc.).	1
9	Given reasonable explanation (e.g., do it tomorrow, stay late, miss something special).	1
10	Given accurate explanation (e.g., some response indicating that work is completed).	1
12	Given example (e.g., spelling, extra work).	1
18	Task names (same as item 1)	1

Note: Give zero for "no answer," "don't know."

B. Sense of self-control over the learning environment

2	Student	1
	Teacher and others	0
3	Yes	1
	No	0
5	Student, ticket	1
	Teacher	0
11	Tasks named (same as item 1)	1
15	Good explanation (regardless of Self-Schedule and Block Schedule)	1

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C. Evaluation

Item Number	Answer	Score
7	Yes	1
	No	0
8	Adequate and appropriate explanation (for either yes or no to #7, e.g., I need three x's to get a good grade; We don't have to).	1
13	Yes	1
	No	0
14	Adequate explanation (e.g., I work hard. My teacher says I'm in book 14).	1
16	Adequate explanation (regardless of yes or no, e.g., good, happy, sad, glad I finished, I don't care).	1
17	Adequate explanation (Regardless of positive or negative, same as item 16).	1

D. Additional information

15a	Preferred Self-Schedule	1
	Preferred Block Schedule	0
16a	Positive	1
	Negative	0

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